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TILEC Discussion Paper

CORPORATE SOCIAL RESPONSIBILITY: DOMESTIC AND INTERNATIONAL PRIVATE EQUITY INSTITUTIONAL INVESTMENT*

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CORPORATE SOCIAL RESPONSIBILITY: DOMESTIC AND INTERNATIONAL PRIVATE EQUITY INSTITUTIONAL INVESTMENT

Abstract

This paper studies institutional investor allocations in socially responsible private equity. The data show that socially responsible investment (SRI) is more common among institutional investors with a greater international investment focus, and among institutions that place greater importance on the International Financial Reporting Standards. The data further indicate SRI is more common when the decision to implement such an investment plan is centralised with a single Chief Investment Officer, and less common among fund-of-fund investments.

Keywords: Corporate Social Responsibility, International Institutional Investment, Private Equity

JEL Classification: G20, G30

1. Introduction

This study empirically investigates the factors that motivate institutional investors to allocate capital to socially responsible private equity investments. Private equity fund managers act as financial intermediaries between institutional investors and entrepreneurial firms. Private equity is a viable and important asset class for institutional investors,¹ and there has been a growing trend towards socially responsible investment practices.² Prior research has not considered an empirical analysis of the intersection between corporate social responsibility and private equity. This issue is nevertheless important for institutional investor capital allocation, as well as for private equity funds and companies seeking capital for undertaking socially responsible entrepreneurial activities. This study seeks to facilitate an understanding of the factors that drive institutional investors to socially responsible private equity investment, and ascertain whether there are differences based on the extent of internationalization of such investments, the legal reporting standards governing such investments, and the allocation of responsibility for decision making over the allocation of capital to socially responsible private equity investments.

We introduce in this paper a new dataset from a survey of Dutch institutional investors that was carried out in 2005. The survey data comprise information from 100 Dutch institutions, 24 of which currently have a socially responsible investment program (of these, 14 include socially responsible private equity investment programs), and 19 which plan on adopting a socially responsible investment program over the period 2006-2010 (of these, 5 include socially responsible private equity investment programs). The data comprise extremely specific details on the institutions' portfolio management practices, as well as their perceptions of the importance of various economic, legal and institutional factors that influence their portfolio allocation decisions. Institutional investors' positions regarding their objectives in their strategic asset allocation were sought. More significantly, views regarding the perceived risks and hurdles faced by such investors were sought to determine main concerns in adopting socially responsible investment. The data enable an empirical assessment of institutional investor allocations to socially

¹ For recent literature on private equity and venture capital, see, e.g., Bascha and Walz (2001a,b), Black and Gilson (1998), Berglof (1994), Bergmann and Hege (1998), Berger and Udell (1998), Gompers and Lerner (1999), Hege et al. (2004), Kannianen and Keuschnigg (2003, 2004), Keuschnigg and Nielsen (2001, 2003a,b, 2004), Lockett and Wright (1999, 2001), Lockett et al. (2002), Manigart et al. (2000, 2002a,b,c), Mayer (2001), Mayer, Schoors and Yafeh, (2005), Neus and Walz (2005), Sapienza (1992), Sapienza et al., (1996), Wright and Lockett (2001, 2003) and Zacharakis and Shepherd (2001, 2003).

² For recent literature on corporate social responsibility and socially responsible investment, see, e.g., McWilliams and Siegel (2001a,b, 1999, 1997), McWilliams, Siegel and Wright (2005) and Paton and Siegel (2005), and Lockett et al. (2005).

responsible investment with consideration to controls for a variety of factors potentially pertinent to asset allocation.

The data indicate three primary findings. First, counter to our expectations, socially responsible private equity investments tend to be more common among institutional investors that invest internationally. Consistent with literature that institutions tend to export their social harms (discussed in section 2), we had expected socially responsible private equity investment to be more common domestically in view of the fact that institutional investors' beneficiaries (and public perception) are primarily based within the country in which they reside, particularly for The Netherlands. However, we find the opposite for Dutch institutional investments in Europe outside The Netherlands and for the US. In particular, we find socially responsible investment is approximately 1-2% more common among institutional investors with a 10% greater international investment focus in Europe outside The Netherlands, and this difference is statistically significant in a multivariate setting with controls for a variety of factors that affect institutional investment. We also provide evidence in a multivariate setting that socially responsible investment is approximately 5-6% more common among institutional investors with a 10% greater international investment focus in the US. By contrast, socially responsible investment is less common for Dutch institutional investor investments in Asia.

Second, the data indicate socially responsible investment is more common among institutional investors that are more sensitive to the new International Financial Reporting Standards (IFRS) (2005). We find a positive and statistically significant correlation between an institutional investor's ranking of the importance of the IFRS and the adoption of a socially responsible private equity investment program. We note, however, that other factors may independently affect this association as the relation between these variables is not robust in a multivariate context with controls for other factors. As such, the data offer suggestive but not conclusive evidence that institutions are sensitive to reporting standards and public perception of their socially responsible investment activities.

Third, the data indicate socially responsible private equity investment is more common when the decision to implement such an investment plan is placed in more the hands of a Chief Investment Officer (CIO, or the head of capital investments), as opposed to a broader investment team. When a CIO is in charge, a socially responsible private equity investment program is approximately 40-50% more likely to be adopted. The intuition for this result lies in the

perception that socially responsible investments involve a sacrifice in expected returns,³ and when investment personnel within an institutional investor compete with each other on the basis of their returns performance, they are less likely to invest in the lower expected return socially responsible investments. By contrast, when a CIO is in charge of the type of investments to be carried out, socially responsible investment programs are much more likely to be adopted.

In the course of empirical analyses and robustness checks, we further show socially responsible private equity investment programs are also more common among larger institutional investors and those expecting greater economic returns from socially responsible investments. We find no statistically significant differences in the propensity to carry out socially responsible investments depending on the type of investor (pension fund, insurance company or bank / financial institution). We do find evidence that socially responsible investment is less common among institutional investors that invest a greater proportion in private equity fund-of-funds, which is expected as fund-of-funds remove the decision making from the institutional investors to the fund-of-funds managers. We also proffer evidence that the factors that affect socially responsible investment decisions for private equity are quite similar to those for other asset classes. The findings from the new data, among others discussed herein, indicate a number of avenues for further research which are outlined herein.

This paper is organized as follows. Section 2 outlines the theoretical propositions and testable hypotheses. The data are introduced in section 3, and summary statistics are provided in that section. Section 4 provides the multivariate empirical analyses of socially responsible asset allocations by Dutch institutional investors. Limitations are discussed and suggestions for future research are outlined in section 5. Concluding remarks follow in the last section.

2. Testable Hypotheses

In subsection 2.1 we overview factors that are relevant to institutional investor socially responsible investment (“SRI”) allocation objectives, and conjecture three main testable hypotheses in reference to internationalization, international reporting standards and the nature of decision making within an institution. Subsection 2.2 thereafter considers the role of other control factors that influence institutional investor capital commitments to SRI, such as size and

³ It is worth pointing out that socially responsible investment returns are not universally regarded to be lower than their counterparts; see *infra* note 8 and accompanying text.

expected returns, type of investment (such as fund-of-funds investments), and type of institutional investor (pension fund, insurance company and bank / financial institution).

2.1. Institutional Investors' Socially Responsible Investment (SRI) Allocation Objectives

Institutional investors have various motivations in their investment strategies when deciding to allocate capital to equities, bonds, derivatives and alternative investments, such as private equity. Portfolios are specifically designed to optimally trade-off risk and return by allocation of the portfolio to appropriately diversified combinations of assets, with consideration to institutional and regulatory factors, and possibly behavioral biases and decision making processes. Following upon the potential affect behavioral biases and decision making processes may have on an institution determining current and projected levels of asset allocation, this study seeks to ascertain a potential trend towards investing in a more specialised form of private equity, socially responsible private equity, also sometimes referred to sustainable private equity.

We believe that a potential trend towards this more specialised form of private equity within the institutional market should be considered empirically as it has been noted that there is increased movement internationally towards making the more objective social and environmental criteria important factors in an institution's subjective business decisions, especially in the United States and Europe. This has correspondingly led to a substantial increase, since the early 1990's, of SRI which, to put it simply, is an investment process that in addition to pure financial criteria, takes social, moral, legality and environmental aspects into account. As socially responsible companies are reaping the benefits of social awareness and increasing public interest in social responsibility, institutional investors, ever ready to share in such benefits, have started showing increased interest in SRI. They have either initiated programs or announced their intention to incorporate SRI in their asset allocation. It is expected that levels of SRI will only rise as it will be a natural progression for institutional investors to expand their asset portfolio, therefore it will be of interest to determine to what extent this will affect private equity investment levels.

Note that this study does not seek to gain insight into the qualitative aspects of an institutional investor's SRI policies, as it is more concerned with the more quantitative aspects of institutional SRI. However, it was recognized that SRI programs have to be defined to a certain extent. Before we set out our definition on a SRI program, we highlight two main considerations.

First, we note that there is no strict definition of SRI. Institutions, while provided general guidelines by both regulators and stakeholders, are not as yet bound by any legislation, rules or regulations, and instead create their own internal policies.⁴ It is up to each institution to determine to what extent social responsibility and each socially responsible issue will affect its asset allocation and investment objectives.

Second, the practice of corporate social responsibility does not mean that returns need to be sacrificed. An effective SRI program should incorporate the aim to gain the maximum possible return for stakeholders in the institution, at an acceptable risk of course, with the idea of combining social, moral, legality and environmental concerns.

Such concerns are addressed generally with a SRI program that utilizes both a “negative screening” method and a “best in class” method. The institutions included in this study are deemed to have SRI programs where they have defined policies which exclude certain investments in companies or funds which invest in companies that are either conducting harmful activities or are present in countries where such harmful activities are rampant. Such activities may be related to moral and legality issues such as where fundamental human rights are being violated, corruption is widespread, and there is continuous failure to meet legislative standards related to labor. The taking into account of environmental issues will possibly exclude investments in companies with extremely poor environmental policies, and social issues may exclude companies involved in the production of weapons. The use of this method “negative screening” in excluding potential investments will have to be utilized in conjunction with the more positive “best in class” method, where positive criteria are also used to determine investment objectives. Here, investments are encouraged in companies or funds which invest in companies where social value-add is a goal, for example where fundamental human rights are not only adhered to, but where conducive working conditions are primary. Companies that take an innovative approach to implementing environmental policies are also deemed to fall within this category. The examples we have listed here are of course not exhaustive, but only meant to illustrate the “ingredients” of a SRI program. The institutions surveyed in this study were left to decide if their SRI policies and practices, if any, fell within the scope of an integrated SRI program that is consistent with industry definitions (Social Investment Forum, 2003).

⁴ Public pressure may eventually result in institutional investors being forced to declare to what extent social and environmental criteria are factors in their investment decisions.

While it is easy to see why institutions are moving towards SRI, we have to acknowledge that the majority of institutional investors do not currently have SRI programs. Of the 100 institutions surveyed, only 24 currently have a SRI program for any asset class (of these, 14 include socially responsible private equity investment programs). However, 19 institutions plan on adopting a SRI program over the period 2006-2010 (of these, 5 include socially responsible private equity investment programs). Reasons for the hesitance on the part of institutions to enter the SRI arena may include the perception that with corporate social responsibility, optimal returns may be forfeited. Institutions, at the end of the day, have the main goal of creating and maintaining stakeholder value. While some stakeholders deem social responsibility to be an important factor, others may see it as separate from their main aim of obtaining the best financial returns. The ability to balance stakeholder needs may be more easily achieved by some institutions (or rather the managers and board of directors of these institutions) than by others. The human resource factor in formulating and implementing SRI programs is also analyzed in this study. Also, many institutions are able to hide behind the cloak of confidentiality to evade calls by their stakeholders to increase social responsibility. They can easily justify their secrecy on policies on the need to protect the same stakeholders seeking increased transparency. This cloak of confidentiality is also the main reason why we have in this study relied on survey responses provided confidentially by respondents.

Based on these considerations, our central interest in this paper is in investigating the propensity of an institution to adopt an SRI program in private equity, and how this decision is related to the extent of their international investment activities, reporting standards, and internal decision making. First, in regards to internationalization, we expected SRI to be more common domestically in view of the fact that institutional investors' stakeholders are primarily based within the country in which they reside, particularly for The Netherlands. SRI are not only on the rise as a result of increasing social awareness by institutions, but primarily as a result of the increasing public interest in social responsibility, and thus the public perception that institutions need to "return to society" that what is given to them by the stakeholders. It is often charged that multinational corporations export social harms (see, e.g., McInerney, 2005).⁵ And as "charity begins at home", it is expected that stakeholders want to enjoy the benefits that increased

⁵ Certainly in corrupt countries, it is expected that corporations are more likely to export social harm (see, e.g., Doh, Rodriguez, Uhlenbruck and Eden, 2003)

corporate social responsibility brings, such as increased adherence to labor and environmental laws by local companies.

Hypothesis 1: An institutional investor is more likely to invest in socially responsible investment domestically as opposed to internationally.

A related matter to the internationalization of investment involves the role of law versus economics in driving institutional investor capital allocation decisions to socially responsible private equity. We expect the role of the new International Financial Reporting Standards (adopted in 2005) to influence the extent to which institutions make investments in private equity. That is, we expect increased transparency of investment decisions, thus increased vulnerability to public perception and pressure, to lead to a greater tendency towards socially responsible investments (consistent with McInerney, 2005, Kolk, 2005; Hillman and Kleim, 2004; Kolk and Tulder, 2001; Kolk, Tulder and Welters, 1999; Shaffer, 1995), as indicated formally in our second hypothesis.

Hypothesis 2: With increased transparency as a result of the new the International Financial Reporting Standards (IFRS) (2005), institutions are more likely to adopt socially responsible investment programs.

As discussed, institutions (or rather their human resources) will have to balance the conflicting needs of its stakeholders. Any decision made by management, or the board of directors, will affect each stakeholder differently. As such, decisions on important policies regarding investment and asset allocation, which will directly affect the returns of the institution, are not taken lightly. In an institution where there is decentralized investment decision making, where a general investment team comprising employees competing with one another over their return performance, each employee is more likely to maximize expected returns as a form of competition and less likely to adopt potentially less profitable SRI. In an organization where investment decisions are centralized through a Chief Investment Officer, who is not only a member of management but also the Board of Directors, it is more probable that innovative (thus untested and risky) SRI policies be formulated and approved. The Board, in the exercise of their discretion, will deem their reliance on the CIO's advice sufficient to meet their duty of care, regardless of the outcome of the implementation of the program. This suggests that the presence

of a CIO can facilitate a socially responsible investment.⁶ Moreover, there are reputation incentives for compliance with norms of corporate social responsibility that institutions are more likely to comply with when decisions are made centrally (Saconni, 2004). It has also been argued that corporations will adopt corporate social responsibility when they recognize their stakeholders prefer such policies (thereby increasing firm value); firms will be more likely to recognize and implement the corporate social responsibility preferences of their stakeholders and implement such preferences when decisions about socially responsible investment are made centrally (Small and Zivin, 2002).

Hypothesis 3: Socially responsible investment programs are more likely to be adopted by institutions that centralize investment decision making.

2.2. Other Factors Relevant to Institutional Investors' Decisions to Allocate Capital to Socially Responsible Investments

The primary objective of institutional investors' asset allocation is to achieve the most optimal trade-off of risk and return. The achievement of this objective however will differ in accordance with specific institutional characteristics. For example, a pension fund and a bank will have different funding and solvency requirements, assets and liabilities, and extent of regulatory oversight. Different institutions may exhibit differences in corporate objectives, contributor/stakeholder/beneficiary demographics, and sensitivity to regulatory oversight and accounting rules. Hence, our empirical analyses control for the type of institutional investor⁷ (pension funds, insurance companies and banks / financial institutions exist in our data, as described in the next section), among other things discussed below.

Private fund managers are financial intermediaries between institutional investors and entrepreneurial firms. Institutional investors do not have the time and specialized skill set to carry out due diligence in screening potential private entrepreneurial firms in which to invest;

⁶ A related argument could be that more socially responsible people go to work for corporations with centralized decision making, although that proposition is not testable with our dataset. There is evidence that corporate social responsibility affects MBA employment decisions (Montgomery and Ramus, 2003).

⁷ The controls for type of institutional investor are consistent with related work showing differences in incentives of different types of institutional investors that invest in private equity (Mayer *et al.*, 2005; Lerner *et al.*, 2005).

institutional investors also do not have the time and skills to efficiently monitor and add value to the investee entrepreneurial firms. The pronounced risks, information asymmetries and agency problems associated with investments in small, illiquid, and high-tech entrepreneurial firms is a primary explanation for the existence of private investment funds with specialized skill sets to mitigate such problems. We conjecture that institutional investors with larger asset bases are more inclined to invest in private equity and in socially responsible investments which require more extensive due diligence.

Investments in private equity can be carried out as direct fund investments, direct company investments, or fund-of-fund investments. Private equity fund-of-funds allocate their institutional investors' assets in what they perceive to be the top private equity funds; therefore, fund-of-funds remove the decision to invest in socially responsible ways from the institutional investor. As such, fund-of-funds investments are less likely to be socially responsible because they need to balance the needs of many institutional investors and do so by following a strict profit maximizing objective. We control for fund-of-fund investments in our empirical tests.

We further consider other control variables in the empirical analyses. For instance, we control for the expected return on socially responsible investments relative to that of other investments.⁸ The higher the relative expected return for socially responsible investments, the greater the allocation to socially responsible investments.

In the empirical analyses of the hypotheses outlined in subsection 2.1, these and other control variables identified in this subsection are considered. The data and summary statistics are described in the next section. Thereafter in section 4 multivariate empirical tests are provided. A discussion of limitations, alternative explanation, future research and concluding remarks follows after section 5.

⁸ In our data (described in the next section), some of the institutional ranked socially responsible investment returns quite highly and to be comparable with other asset classes, consistent with recent empirical evidence (see, e.g., Doweell, Hart and Yeung, 2000; Schroder, 2003; Ali and Gold, 2002; Greczy, Stambaugh and Levin, 2003; Derwall and Koedijk, 2005; Plantinga and Scholtens, 2001). As well, note that recent evidence indicates socially responsible investments do not provide significant diversification benefits (Bello, 2005).

3. Data

3.1. *Methods and Survey Instrument*

We introduce in this paper a new dataset from 100 Dutch institutional investors. The data assembled for this paper are derived primarily from a survey of Dutch institutional investors carried out between February 2005 and May 2005. This use of surveys was necessary for the research questions considered in this paper. Data on past and current institutional asset allocation and investment levels in private equity do exist from some venture capital / private equity associations and annual financial reports,⁹ but other information such as projected or future asset allocation, investment objectives and current and projected SRI activity are not available in the public domain, and in our opinion, could only be obtained by survey. Our survey instrument also enabled us to determine the perceived effect the International Financial Reporting Standards had on SRI activity. To verify and enhance data obtained by the survey, follow up interviews were carried out and where possible, reference was made to institutions' web sites and publications.

The instrument we used to obtain the detailed data required about domestic and international SRI activity by Dutch institutions is a 13 page questionnaire, comprising 32 questions. Robustness is achieved chiefly by framing questions in a way that calls for numeric responses, or a simple "yes" or "no" response. In view of the fact that the potential respondents, while financial institutions, are from different branches of finance, a glossary of terms was provided in the survey to ensure uniformity in defining terms which may not necessarily be used in the same manner across sectors. An overview of the information collected is summarized in Table 1 which defines the primary variables used in this study.

[Insert Table 1 About Here]

3.2. *Potential Sample Selection Bias*

The potential respondents, the population of institutional investors in The Netherlands, were identified from various sources including, but not limited to the following:

1. Pensioen & Verzekeringskamer (Pensions and insurance supervisory authority of the Netherlands, PVK);

⁹ See, e.g., www.evca.com for European data and www.nvp.nl for Dutch data.

2. De Nederlandsche Bank (DNB)
3. Autoriteit Financiële Markten (The Netherlands Authority for the Financial Markets, AFM)
4. The Dutch Private Equity and Venture Capital Association (NVP) and the European Venture Capital Association; and
5. Web sites of Dutch financial institutions.

Pursuant to identifying the appropriate contact persons, the survey instrument was sent to approximately 1114 Dutch institutions, comprising:

- a. 797 Pension Funds¹⁰, including company pension funds, industrial pension funds, and occupational pension funds;
- b. 205 Insurance companies¹¹; and
- c. 112 Banks¹², including Universal Banks, Securities credit institutions, Savings banks, Mortgage banks, and other financial service providers.

Participation was chiefly solicited with the promise that the aggregated survey results would be disseminated to respondents. Only one questionnaire was disseminated in hard copy by mail to each institution, and addressed specifically to the institution's Chief Investment Officer or an equivalent manager of private equity investments for an institution where such contact details are available.

One limitation to obtaining data through a survey is the possibility of sample selection bias. While we acknowledge that this is a possibility, we believe from a detailed analysis of the responses received and the data obtained from the responses that this concern does not arise in

¹⁰ All types of pension funds were included to mitigate response bias. As of 2004, all pension funds in the Netherlands had assets at €442 billion, with Dutch company pensions having assets of over €41 billion. Pension funds with assets below €1 million have however been excluded (954 in total) primarily because the possibility of sample selection bias is mitigated by the breadth of asset size of the pension funds that were sent survey questionnaires. Of the 797 pension funds surveyed, 524 have assets between €10 million to €1 billion. A majority of those have assets less than €100 million. 34 Pension Funds control assets between €1 billion and €5 billion, while 12 have more than €5 billion within their control.

¹¹ Those institutions within this category but described as institutions with an office in the Netherlands, or with unrestricted services to the Netherlands and mutual benefit companies have not been included. While their inclusion will increase the approximate figure provided to 1916, they are not deemed as Dutch institutions for the purposes of this study. As in the case of the target pension funds, we believe that the breadth of asset size of the insurance companies that were sent survey questionnaires mitigates any possible sample selection bias. Of the number surveyed, 32 have assets between €100 million and €1 billion, 27 have more than €1 billion and 29 have less than €100 million.

¹² Non-EU and EU bank branches have not been included.

this exercise. First, survey data were gathered for a final sample of 100 institutional investors comprising company pension funds, industrial pension funds, occupational pension funds, life and non-life insurance companies, banks and other financial service providers. Our sample of respondent institutions includes 56 pension funds, 25 insurance companies, and 19 banks (see Table 2). Limitations in our sample size from each sector of the finance industry from which we derived data, as well as the limited information about comparable academic work on institutional investor behaviour in private equity, however, makes reliable statistical comparisons of our sample relative to the population of other types of investors in private equity intractable.

[Insert Table 2 About Here]

Second, a broad array of respondents replied to the survey. For example, the data show the median respondent asset size of €800,000,000 and the average being €4,665,000,000, indicating respondents were of a variety of asset sizes. The possibility of sample selection bias is further reduced by the presence of institutions that do not currently allocate any of their assets to private equity, and do not plan to allocate any up to 2010, institutions that plan to increase current allocations in the near future and also institutions that plan to reduce allocations by 2010. We further did not find a statistically significant difference between average assets of respondents versus non-respondents.

Finally, a sufficient number of variables including, but not limited to, the percentage of the institution's total assets both currently allocated and projected to be allocated to specified asset classes including equities, bonds, cash/currencies, index funds, and alternative investments (Hedge funds, commodities, private equity, property/real estate), current and projected distribution of socially responsible private equity investments both within The Netherlands and across regions such as Europe, Asia, USA and the rest of the world, current and projected distribution of socially responsible private equity investments according to type of investment such as direct investments, direct fund investments and fund-of-fund investments, which type of investment is utilised for both local and regional socially responsible private equity investments, and the degree of importance placed by the institution of existing and proposed Dutch regulations on asset allocation strategies. We unfortunately realise that we cannot be absolutely rule out the possibility of a response bias due to the unique nature of the data.

3.2. Summary Statistics

The data indicate that the 100 institutional investors comprising pension funds, insurance companies, banks and other financial institutions invested on average 1.09% of their assets in private equity as at 2005, and planned on investing 1.44% of their assets in private equity over the period 2006 – 2010 (Table 2 Panel B). Out of these 100 institutions, 19 plan on (over the period 2006 – 2010) investing on average more than 2.5% of their assets in private equity, 10 plan on investing more than 5% of their assets in private equity, and 6 plan on investing more than 7.5% of their assets in private equity. Total private equity investment accounted for approximately €10.5 billion as at 2005. The proportional allocations to private equity in The Netherlands are consistent with institutional investor allocations to private equity funds in the US (see, e.g., Gompers and Lerner, 1999) and Australia (see, e.g., Cumming *et al.*, 2005).

Figure 1 indicates 24 (of 100) institutions currently have a socially responsible investment program (of these, 14 include socially responsible private equity investment programs), and 19 which plan on adopting a socially responsible investment program over the period 2006-2010 (of these, 5 include socially responsible private equity investment programs). Figure 2 shows the investment in socially responsible investment programs by type of institutional investor (pension fund, insurance company and bank). The picture in Figure 2 does not suggest there is a material difference in the propensity to invest in socially responsible investments across different types of Dutch institutions. Figures 3 and 4 indicate the percentage of institutions that have socially responsible private equity investments among those institutions that allocate more than 25% of their total private equity investments in a particular region. Figure 3 presents the data for 2005, and Figure 4 presents the data for planned allocations in 2006-2010. The data indicate there are differences over time in the propensity to invest internationally in socially responsible investments: international socially responsible private equity investments among Dutch institutions are becoming more common in Europe outside The Netherlands and in the US. Figures 3 and 4 also indicate that Asian investments by Dutch institutions are socially responsible.

[Insert Figures 1 – 4 About Here]

Tables 3 and 4 provide comparison tests and a correlation matrix, respectively. These univariate tests indicate relations between the variables without simultaneously controlling for

other factors. The univariate summary statistics and tests in Tables 3 and 4 indicate socially responsible private equity investment is more common for European investments outside The Netherlands, and investments in the United States from Dutch institutional investors. Socially responsible investment is more common when institutional investors rank the importance of the International Financial Reporting Standards as being more important. Socially responsible investment is less common for fund-of-funds investments. Socially responsible investment is more common among larger institutions, and among institutions that centralize decision making responsibility via a Chief Investment Officer.

[Insert Tables 3 – 4 About Here]

Tables 3 and 4 provide useful preliminary insights into the relations between the variables. These summary statistics also enable assessment of potential problems with the multivariate empirical tests in regards to, for example, collinearity across explanatory variables or some other type of misspecification error. For example, due to the high correlation between the regional variables, such variables are not included simultaneously in the multivariate regressions presented in the next section. Alternative multivariate models are presented and discussed below in the next section.

4. Multivariate Empirical Analyses

The multivariate empirical tests in this section focus on logit regression analyses of the probability that an institutional investor has a socially responsible private equity investment program. In Table 5 Panel A, we consider all 100 institutional investors in the dataset, regardless of whether or not they invest in private equity of any type. In Table 5 Panel B we consider logit regression analyses of the subset of 35 institutional investors that are (2005) or expect to be (2006 – 2010) invested in private equity. Table 5 Panel B also considers in Model (11) bivariate logit analyses involving two steps: (1) the probability that an institutional investor invests in private equity, and (2) the probability that an institutional investor is invested in socially responsible private equity. The Model (11) specification is a useful robustness check to ascertain whether there are statistical differences in the subset of firms that invest in private equity versus those that do not, and to econometrically correct for those potential differences in the spirit of Heckman (1976, 1979). Table 6 thereafter considers logit regression analyses of the probability that an institutional investor invests in social responsibility for any asset class, not only private equity.

Each of the regression models (17 in total) are provided to show robustness to alternative subsets in the sample, alternative definitions of the dependent variable, and alternative explanatory variables. The variables are as defined above in section 3 and Table 1. The structure of the data in terms of the questions put to the institutional investors in the survey was also designed to mitigate any concern with potential endogeneity in the relations studied, as indicated by the variable definitions in Table 1. The alternative specifications across the 17 regression models provide further robustness checks for potential collinearity across the variables, and other specifications not explicitly reported are available upon request from the authors.

Table 5 provides interesting evidence in respect of the three primary hypotheses outlined in section 2. First, counter to our expectations (Hypothesis 1), socially responsible private equity investments are more common among institutional investors that invest internationally. In particular, socially responsible investment is approximately 1-2% more common among institutional investors with a 10% greater international investment focus in Europe outside The Netherlands (see Models 2, 5, 6, 8 and 11 in Table 5 Panels A and B). The economic significance of a 10% change is as low as 0.4% in Model 6 and as high as 2.7% in Model 11. All of these estimates are statistically significant at at least the 10% level of significance, and robust to control variables for other factors that influence institutional investor investment allocations.

Table 5 Model 3 indicates that socially responsible private equity investment is not statistically different for private equity investments in the United States by Dutch institutional investors, when all 100 Dutch institutional investors are considered together regardless of whether or not they invest in private equity. However, when we consider the subsample of Dutch institutional investors that invest in private equity separately, the data indicate that socially responsible private equity investment is approximately 5-6% more common among institutional investors with a 10% greater international investment focus in the United States. By contrast, there is no evidence from any specification that socially responsible private equity investment is statistically related to cross-border investment decisions in Asia and/or for domestic investments in The Netherlands.

Recall in section 3 that the data showed univariate correlation evidence that socially responsible investment is more common among institutional investors that are more sensitive to International Financial Reporting Standards (IFRS) (consistent with Hypothesis 2). However, it appears that other factors independently affect the association between the importance of the

IFRS to an institution and the propensity to invest in socially responsible private equity investments: the relation between these variables is not robust in a multivariate context with controls for other factors in Table 5, Panels A and B. As such, the data offer suggestive but not conclusive evidence that institutions are sensitive to reporting standards and public perception of their socially responsible private equity investment activities. It is nevertheless noteworthy that Model (17) in Table 6 (for all types of investment, including public stock markets and not just private equity) that the IFRS is statistically related (at the 10% level of significance) to the propensity to invest in socially responsible investments. Model 17 indicates that an increase in the ranking of the importance of the IFRS by 1 (on a scale 1 – 5, where 5 is the most important) increases the likelihood that an institutional investor will adopt a socially responsible investment program by 1.1%. The data therefore suggest that reporting standards are more closely connected to public investments as opposed to private investments, but again, these statistical differences are not very pronounced in the data.

In regards to Hypothesis 3, note that the data indicate socially responsible private equity investment is more common when the decision to implement such an investment plan is placed in more the hands of a Chief Investment Officer (CIO, or the head of capital investments), as opposed to a broader investment team. When a CIO is in charge, a socially responsible private equity investment program is approximately 40-50% more likely to be adopted. As discussed in section 2, socially responsible investments are perceived to involve a sacrifice in expected returns, and when investment personnel within an organization compete with each other on the basis of their returns performance, they are less likely to invest in the potentially lower expected return socially responsible investments. By contrast, when a CIO is in charge of the type of investments to be carried out, socially responsible investment programs are much more likely to be adopted.

Many of the control variables in the regression models are statistically significant and worth mentioning. Socially responsible private equity investment programs are more common among larger institutional investors and those expecting greater economic returns from socially responsible investments. An increase in the rank of the relative returns to socially responsible investments by 1 (on a scale of 1 to 5, where 1 is the lowest) increases the probability of a socially responsible investment by 1-3% depending on the specification of the model (see Model 5 and 7-10). We find no statistically significant differences in the propensity to carry out socially responsible investments depending on the type of investor (pension fund, insurance company or

bank / financial institution) in any specification in Tables 5 and 6. We do find evidence that socially responsible investment is approximately 1-3% less common among institutional investors that invest a 10% greater proportion in fund-of-funds (see Models 8-9 and 13-16, but the statistical significance of this evidence is not robust in some of the other specifications), which is expected as fund-of-funds remove the decision making from the institutional investors to the fund-of-funds managers.

Finally, note by comparison of Table 6 to Table 5 that the evidence that the factors that give rise to socially responsible investment decisions for private equity are quite similar to those for other asset classes. This is a somewhat unexpected result, as private equity is widely viewed as a distinctive asset classes.¹³ We did make note of the fact that the IFRS appears to be somewhat more closely related to investments other than private equity, but these differences were not statistically pronounced in the data. It is possible that regulatory factors not captured by the data could better explain differences across asset classes, but that issue is beyond the scope of this paper and the new dataset used herein. This issue, along with other related issues is discussed further in the next section.

5. Extensions and Future Research

This paper introduced the first international dataset on socially responsible private equity investments. As the data obtained in this paper are new and unique and extremely difficult to obtain from institutional investors, there are of course limitations in the number of observations. We nevertheless gathered sufficient details in the data to control for a variety of factors that could affect institutional investor allocations to different asset classes and to socially responsible investments. And as we have discussed in the paper, we do not have any reason to believe there are biases with regard to sample selection in the data we were able to obtain.

Our analysis focused on Dutch institutional investor allocations to socially responsible private equity investment in The Netherlands, Europe outside The Netherlands (our data cannot distinguish between specific countries in Europe due to the confidential nature of the data considered), the United States and Asia (again, we cannot distinguish between specific regions). We provided suggestive evidence, although not conclusive, that regulations may have different effects for different asset classes in regards to social responsibility. Further work could consider

¹³ See references *supra* note 1.

expanding the data in terms of more closely investigating different asset classes, as well as possibly for different time periods and different countries (in the spirit of Manignan and Ralston, 2002; see also Mayer, 2001, for a discussion of differences in institutional investor decisions in the United Kingdom versus the United States).

Given the increase in institutional investor propensity to adopt socially responsible investment programs in private equity (and other asset classes), further research could also investigate the factors that give rise to private equity fund managers themselves to offer such investment alternatives to their institutional investors. The data introduced in this paper suggest there is an increasing demand by institutional investors to invest responsibly, and as such it is natural to expect the market to be more sensitive to the socially responsible asset class. There is ample scope for further research to consider when, why and how private fund managers implement such programs.

6. Conclusions

The study investigated for the first time the factors that motivate institutional investors to allocate capital to sustainable socially responsible private equity investments. We introduced a new detailed dataset from a survey of Dutch institutional investors. The data provided strong evidence that Dutch institutional investors are more likely to invest in socially responsible private equity investments in Europe outside The Netherlands and in the United States, in contrast to domestic Dutch investments and Asian investments. This evidence was unexpected since prior literature (and media) often indicates social harms are more likely to be exported.

The new data introduced herein also provided partial support for the view that socially responsible investments are more likely among institutions that consider adherence to International Financial Reporting Standards (IFRS) to be more important. We also provided suggestive evidence that the IFRS is more important for asset classes other than private equity, but suggested further research on topic is warranted.

There was also very strong evidence in the data introduced herein that socially responsible investments are more likely among institutions that centralize decision making in the hands of a Chief Investment Officer. Institutions that make use of an internal competitive model

among investment personnel are more likely to maximize expected profits and not consider social responsibility in their decisions.

Finally, the data indicated socially responsible investment is more common among larger institutional investors and those investors expecting greater returns from such investments. Overall, we did not find pronounced differences across factors that lead to socially responsible investing in private equity versus other asset classes. Further empirical research on other asset classes and/or institutional investors different countries would shed more light on topic.

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Figure 1. Socially Responsible Investment (SRI) Programs for Private Equity and Other Asset Classes among 100 Dutch Institutional Investors

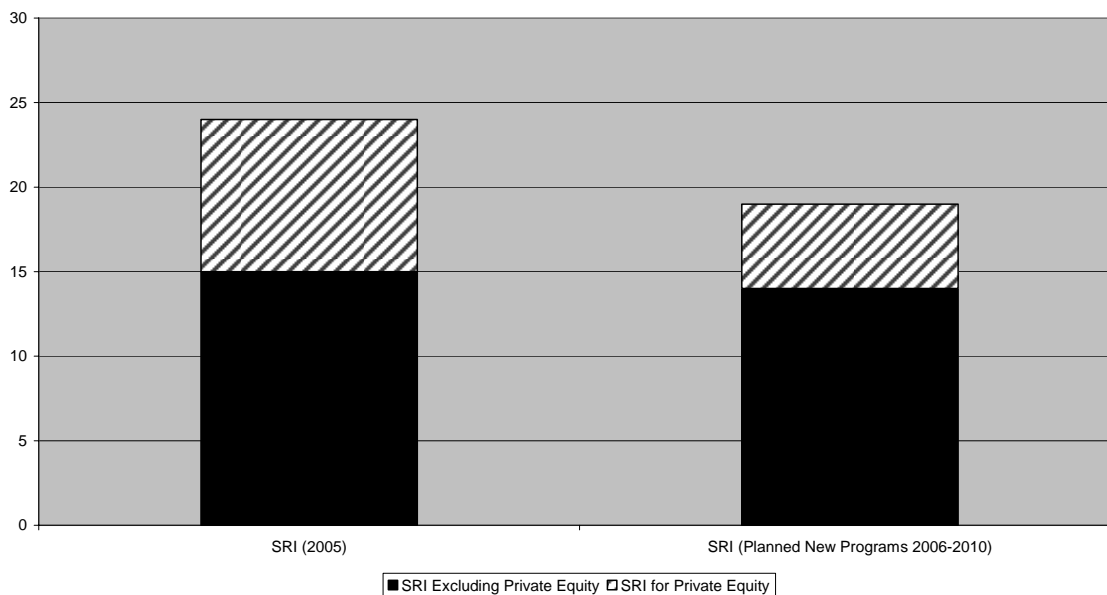


Figure 2. Socially Responsible Investment (SRI) Programs by Type of Institution (Current as at 2005 or Planned for 2006-2010)

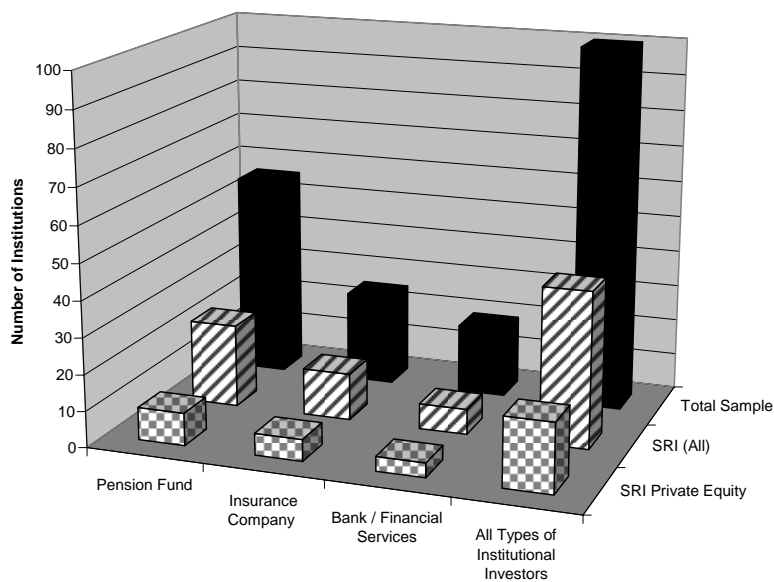


Figure 3. For Dutch Based Institutions with >25% of Total Private Equity Investments in a Certain Region, What Proportion are Currently Socially Responsible in 2005?

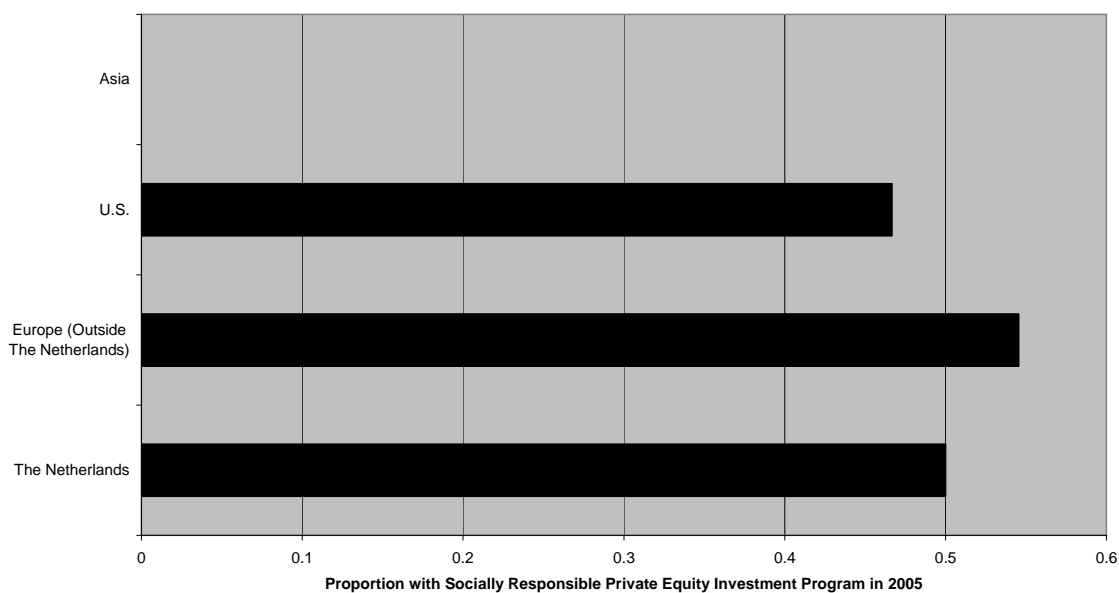


Figure 4. For Dutch Based Institutions with >25% of Total Private Equity Investments in a Certain Region, What Proportion Plan on Being Socially Responsible in 2006-2010?

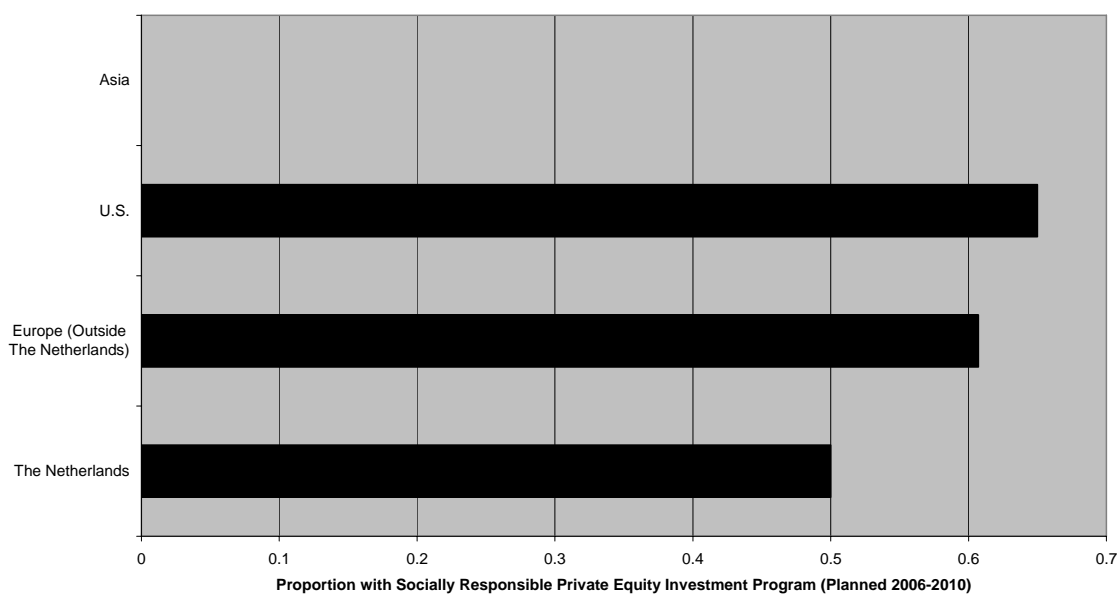


Table 1. Variable Definitions and Summary Statistics

This table presents selected variables and descriptive statistics of in the dataset of 100 Dutch institutional investors based on data collected in 2005.

Variable Name	Definition	Mean	Median	Standard Deviation	Minimum	Maximum	Number of Observations
Social Responsible Investment Program 2005 - 2010	A dummy variable equal to 1 for institutions that currently have a socially responsible investment program as at 2005, or plan on adopting one in 2006 – 2010	0.43	0	0.50	0.00	1.00	100
Social Responsible Investment Program 2005	A dummy variable equal to 1 for institutions that currently have a socially responsible investment program as at 2005	0.24	0	0.46	0.00	1.00	100
Social Responsible Private Equity Investment Program 2005 - 2010	A dummy variable equal to 1 for institutions that currently have a socially responsible private equity investment program as at 2005, or plan on adopting one in 2006 – 2010	0.19	0	0.39	0.00	1.00	100
Social Responsible Private Equity Investment Program 2005	A dummy variable equal to 1 for institutions that currently have a socially responsible private equity investment program as at 2005	0.14	0	0.35	0.00	1.00	100
The Netherlands Domestic Private Equity Investment	The percentage of the institutions' private equity investments in The Netherlands expected for 2006 – 2010.	0.25	0	1.27	0.00	9.00	100
European (outside The Netherlands) Private Equity Investment	The percentage of the institutions' private equity investments in Europe excluding The Netherlands expected for 2006 – 2010.	0.69	0	1.58	0.00	11.25	100
US Private Equity Investment	The percentage of the institutions' private equity investments in the U.S. expected for 2006 – 2010.	0.41	0	1.00	0.00	5.63	100
Asia Private Equity Investment	The percentage of the institutions' private equity investments in Asia expected for 2006 – 2010.	0.05	0	0.25	0.00	2.06	100
Fund of Fund Investment 2006 - 2010	The percentage of the institutions' direct private equity fund-of-fund investments expected for 2006 – 2010.	0.62	0	1.49	0.00	8.00	100
International Financial Reporting Standards	The institutional investor's rank (1=low and 5=high) of the importance of the new International Financial Reporting Standards (IFRS) (2005) for the decision to invest	2.23	2	0.92	1.00	5.00	100
Rank of Attractiveness of Returns to Sustainable Investment	The institutional investor's rank (1=low and 5=high) of the comparative attractiveness of the returns to adopting a socially responsible investment program relative to not adopting such a program	2.49	3	1.16	1.00	5.00	100
Chief Investment Officer Responsibility	A dummy variable equal to 1 for institutions that allocate the responsibility to adopting a socially responsible investment program to a single Chief Investment Officer	0.08	0	0.27	0.00	1.00	100
Assets (millions of Euros)	The total assets managed by the institutional investor (in millions of 2005 Euros)	4,753.00	800	9,060.41	300	50,000	100
Pension Fund	A dummy variable equal to 1 for a pension fund institutional investor	0.56	1	0.50	0	1	100
Insurance Company	A dummy variable equal to 1 for an insurance company institutional investor	0.25	0	0.44	0	1	100
Bank / Financial Institution	A dummy variable equal to one for a bank / financial institutional investor	0.19	0	0.39	0	1	100

Table 2. Summary Statistics

This table summarizes the data by the characteristics of the institutional investors in terms of assets and number of institutions with a socially responsible investment program (Panel A), and their current and future asset allocations (Panel B).

Panel A. Characteristics of the Institutional Investors in the Dataset

Type of Financial Institution	Number of Institutions in the dataset	Average Assets (millions of Euros)	Number of Institutions With a Socially Responsible Investment Program	Number of Institutions with a Socially Responsible Investment Program in 2005 or Planning to Adopt One in 2006 – 2010
Pension Fund	56	€2,942.86	14	23
Insurance Company	25	€5,008.00	10	13
Bank	19	€9,752.63	5	7
All Types of Institutional Investors	100	€4,753.00	29	43

Panel B. Asset Allocations (Percentage of Assets Invested in Different Asset Classes)

...Current (as at 2005)							
Type of Financial Institution	Publicly Traded Equities	Bonds	Cash / Currencies	Index Funds	Private Equity	Other Types of Alternative Investments	Other
Pension Fund	33.38	50.89	4.32	1.60	1.17	7.43	1.21
Insurance Company	23.80	55.72	9.56	0.48	0.73	6.23	3.48
Bank	27.32	48.43	5.11	0.58	1.36	16.05	1.16
All Types of Institutional Investors	29.83	51.63	5.78	1.13	1.09	8.77	1.77
...Planned (for the period 2006-2010)							
Type of Financial Institution	Publicly Traded Equities	Bonds	Cash / Currencies	Index Funds	Private Equity	Other Types of Alternative Investments	Other
Pension Fund	31.51	51.73	2.86	1.97	1.67	9.53	0.73
Insurance Company	24.71	59.02	2.52	2.16	0.62	8.37	2.60
Bank	24.95	47.59	2.68	1.05	1.86	21.34	0.53
All Types of Institutional Investors	28.56	52.77	2.74	1.85	1.44	11.48	1.16

Table 3. Difference of Means, Proportions and Medians Tests

This table presents difference of means, proportions and medians tests for the population of institutional investors that do and do not have as at 2005 (or plan on having for 2006 – 2010) a socially responsible private equity investment program. *, **, *** Statistically significant at the 10%, 5% and 1% levels, respectively.

	Socially Responsible Private Equity Investment Program (current at 2005 or planned for 2006 – 2010)			No Socially Responsible Private Equity Investment Program (current at 2005 or planned for 2006 – 2010)			Difference of Means Test	Difference of Medians Test (or Difference of Proportions Test for Dummy Variables)
	Number of Observations	Mean	Median	Number of Observations	Mean	Median		
The Netherlands Domestic Private Equity Investment	19	0.34	0.00	81	0.2353	0.00	0.52	p <= 0.146
European (outside The Netherlands) Private Equity Investment	19	2.39	1.88	81	0.30	0.00	3.55***	p <= 0.000***
US Private Equity Investment	19	1.67	1.13	81	0.12	0.00	3.98***	p <= 0.000***
Asia Private Equity Investment	19	0.16	0.00	81	0.03	0.00	1.92*	p <= 0.213
Fund of Funds Private Equity Investment	19	1.35	0.88	81	0.45	0.00	2.35**	p <= 0.000***
International Financial Reporting Standards	19	2.63	3.00	81	2.14	2.00	1.89*	p <= 0.677
Rank of Attractiveness of Returns to Sustainable Investment	19	2.89	3.00	81	2.40	3.00	1.76*	p <= 0.171
Chief Investment Officer Responsibility	19	0.32	0.00	81	0.02	0.00	2.62**	4.21***
Log (Assets)	19	12336.84	6500.00	81	2974.07	800.00	3.10***	p <= 0.001***
Pension Fund	19	0.47	1.00	81	0.58	1.00	-0.82	-0.84
Insurance Company	19	0.32	0.00	81	0.23	0.00	0.72	0.77
Bank	19	0.21	0.00	81	0.19	0.00	0.24	0.25

Table 4. Correlation Matrix

This table presents correlation coefficients across selected variables as defined in Table 1. Correlations significant at the 5% level are highlighted in bold and underline font.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	Social Responsible Investment Program 2005 - 2010	1.00													
(2)	Social Responsible Investment Program 2005	<u>0.74</u>	1.00												
(3)	Social Responsible Private Equity Investment Program 2005 - 2010	<u>0.56</u>	<u>0.48</u>	1.00											
(4)	Social Responsible Private Equity Investment Program 2005	<u>0.46</u>	<u>0.63</u>	<u>0.83</u>	1.00										
(5)	The Netherlands Domestic Private Equity Investment	-0.07	-0.07	0.03	-0.01	1.00									
(6)	European (outside The Netherlands) Private Equity Investment	<u>0.20</u>	<u>0.19</u>	<u>0.52</u>	<u>0.44</u>	0.03	1.00								
(7)	US Private Equity Investment	<u>0.28</u>	<u>0.25</u>	<u>0.61</u>	<u>0.50</u>	0.00	<u>0.50</u>	1.00							
(8)	Asia Private Equity Investment	0.07	0.00	<u>0.22</u>	0.09	<u>0.02</u>	<u>0.32</u>	<u>0.53</u>	1.00						
(9)	Fund of Funds Private Equity Investment	-0.01	-0.01	<u>0.24</u>	0.16	<u>0.34</u>	<u>0.45</u>	<u>0.32</u>	<u>0.41</u>	1.00					
(10)	International Financial Reporting Standards	0.07	<u>0.22</u>	<u>0.21</u>	<u>0.25</u>	<u>0.19</u>	<u>0.25</u>	<u>0.23</u>	-0.10	<u>0.29</u>	1.00				
(11)	Rank of Attractiveness of Returns to Sustainable Investment	<u>0.26</u>	0.05	0.17	0.05	-0.14	0.04	0.08	0.05	-0.09	-0.14	1.00			
(12)	Chief Investment Officer Responsibility	<u>0.19</u>	0.06	<u>0.42</u>	<u>0.20</u>	0.00	0.17	<u>0.21</u>	<u>0.26</u>	<u>0.37</u>	0.13	0.07	1.00		
(13)	Log (Assets)	0.17	0.18	<u>0.46</u>	<u>0.40</u>	-0.02	<u>0.26</u>	<u>0.36</u>	0.12	<u>0.31</u>	<u>0.37</u>	-0.17	<u>0.27</u>	1.00	
(14)	Pension Fund	-0.04	-0.10	-0.08	-0.05	0.09	0.02	0.07	0.11	0.18	<u>-0.26</u>	0.18	-0.11	<u>-0.33</u>	1.00
(15)	Insurance Company	0.10	0.14	0.07	0.03	-0.06	-0.14	-0.14	-0.09	-0.16	0.11	-0.07	0.09	0.09	<u>-0.65</u>

Table 5. Logit Regression Analyses for Sustainable / Socially Responsible Private Equity Investment

This table presents logit regression estimates of the probability adoption of a sustainable and socially responsible investment policy in private equity by a Dutch institutional investor. Panel A considers all 100 institutional investors in the sample regardless of whether or not they are or plan on investing in private equity. In Models (1) - (5), adoption of a sustainable and socially responsible investment policy includes means either adoption has taken place as at 2005, or the institution plans to adopt such a policy sometime within the period 2006-2010. In Model (6) adoption only refers to the current practice as at 2005. Panel B considers the subsample of institutional investors that will be invested in private equity in the period 2006 – 2010 in Models (7) – (10). Model (11) in Panel B involves a 2-step bivariate regression in the spirit of Heckman (1976, 1979) whereby in the first step the probability that the institution invests in private equity is estimated, while in the second step the probability that the institution makes socially responsible private equity investments is estimated. The independent variables are as defined in Table 1. The coefficients on the independent variables are robust to potential problems associated with collinearity of included and excluded variables. The total population of firms comprises 100 Dutch institutional investors described in Tables 1 and 2. The values presented are not the standard logit coefficients; rather, they are the marginal effects so that the economic significance is shown alongside the statistical significance. *, **, *** Significant difference for the sample of all other firms in the group at the 10%, 5% and 1% levels, respectively.

Panel A. Full Sample of 100 Dutch Institutions

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)		Model (6)	
	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic
Constant	-0.966	-	-0.824	-	-0.741	-	-0.969	-	-0.794	-	-0.661	-
The Netherlands Domestic Private Equity Investment	0.015	4.144***		2.821***		2.626***		4.083***		2.421**		2.868***
European (outside The Netherlands) Private Equity Investment		0.632	0.111	2.180**					0.075	1.710*	0.040	1.818*
US Private Equity Investment					0.262	1.549						
Asia Private Equity Investment							0.145	0.998				
Fund of Funds Private Equity Investment	-0.014	-0.577	-0.069	-1.685*	-0.095	-1.303	-0.025	-0.788	-0.042	-1.302	-0.028	-1.322
International Financial Reporting Standards	0.015	0.386	-0.006	-0.172	0.021	0.475	0.034	0.823	0.005	0.178	0.027	1.117
Rank of Attractiveness of Returns to Sustainable Investment									0.046	1.875*	0.020	1.096
Chief Investment Officer Responsibility	0.496	2.044**	0.661	2.423**	0.621	2.190**	0.459	1.893*	0.512	1.414	0.096	0.817
Log (Assets)	0.085	3.454***	0.069	2.591***	0.049	1.692*	0.080	3.356***	0.056	2.164**	0.044	2.464**
Pension Fund	0.137	1.376	0.130	1.167	0.072	0.590	0.136	1.361	0.097	1.086	0.101	1.348
Insurance Company	0.110	0.798	0.201	1.041	0.173	0.992	0.107	0.793	0.154	0.887	0.088	0.818
Model Diagnostics												
Number of Observations	100		100		100		100		100		100	
Number of Observations where Dependent Variable = 1	19		19		19		19		19		14	
Adjusted R ² (pseudo R ² for Model 1)	0.314		0.541		0.530		0.323		0.596		0.393	
Loglikelihood Function	-33.348		-22.318		-22.837		-32.906		-19.633		-24.596	
Chi Square Statistic	30.549***		52.608***		51.570***		31.434***		57.978***		31.801***	

Table 5 continues on the following page...

Table 5 (Continued)
Panel B. Subsample of Private Equity Investments (Models (7) - (10)) and Bivariate Logit Estimates with Sample Selection (Model (11))

	Model (7) Subsample of Institutions in Private Equity		Model (8) Subsample of Institutions in Private Equity		Model (9) Subsample of Institutions in Private Equity		Model (10) Subsample of Institutions in Private Equity		Model (11)			
									Step 1: Probability of Investment in Private Equity		Step 2: Probability of Socially Responsible Private Equity	
	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic
Constant	-0.716	-1.155	-2.477	-2.207**	-1.349	-1.376	-2.173	-2.103**	-3.490	-3.315***	-4.451	-2.786***
The Netherlands Domestic Investment	-0.025	-0.339										
European (outside The Netherlands) Investment			0.204	1.764*							0.274	2.039**
US Investment					0.574	2.227**						
Asia Investment							0.217	0.680				
Fund of Funds Investment	-0.113	-1.481	-0.188	-1.950*	-0.271	-1.983**	-0.173	-1.574				
International Financial Reporting Standards	-0.088	-0.711	-0.063	-0.392	0.002	0.016	0.011	0.067			-0.380	-1.622
Rank of Attractiveness of Returns to Sustainable Investment	0.375	1.851*	0.207	1.621	0.245	1.837*	0.237	1.955*				
Attractiveness of Returns to Private Equity versus Public Equity									0.013	3.506***		
Chief Investment Officer Responsibility			0.470	2.506**	0.404	2.125**	0.450	1.983**			0.700	1.448
Log (Assets)	0.122	1.566	0.211	2.018**	0.060	0.567	0.188	1.944*	0.243	1.587	0.290	2.883***
Pension Fund	0.151	0.528	0.324	0.962	0.037	0.110	0.279	0.920				
Insurance Company	0.159	0.579	0.289	1.064	0.194	0.862	0.083	0.256				
Model Diagnostics												
Number of Observations	35		35		35		35		100		35	
Number of Observations where Dependent Variable = 1	19		19		19		19		35		19	
Adjusted R ² (pseudo R ² for Model 1)	0.193		0.406		0.440		0.296					
Loglikelihood Function	-19.466		-14.323		-13.520		-16.990		-46.219			
Chi Square Statistic	9.331		19.618**		21.223***		14.282*					

Table 6. Logit Regression Analyses for Sustainable / Socially Responsible Investment

This table presents logit regression estimates of the probability adoption of a sustainable and socially responsible investment policy in any asset class by a Dutch institutional investor. In Models (12) - (16), adoption of a sustainable and socially responsible investment policy includes means either adoption has taken place as at 2005, or the institution plans to adopt such a policy sometime within the period 2006-2010. In Model (17) adoption only refers to the current practice as at 2005. The independent variables are as defined in Table 1. The coefficients on the independent variables are robust to potential problems associated with collinearity of included and excluded variables. The total population of firms comprises 100 Dutch institutional investors described in Tables 1 and 2. The values presented are not the standard logit coefficients; rather, they are the marginal effects so that the economic significance is shown alongside the statistical significance. *, **, *** Significant difference for the sample of all other firms in the group at the 10%, 5% and 1% levels, respectively.

	Model (12)		Model (13)		Model (14)		Model (15)		Model (16)		Model (17)	
	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic	Marginal Effect	t-statistic
Constant	-0.819	-2.280**	-0.840	-2.142**	-0.622	-1.451	-0.871	-2.361**	-1.185	-2.755***	-1.029	-3.014***
The Netherlands Domestic Investment	-0.021	-0.373										
European (outside The Netherlands) Investment			0.156	1.975**					0.144	1.698*	0.071	1.598
US Investment					0.412	1.717*						
Asia Investment							0.229	0.867				
Fund of Funds Investment	-0.073	-1.363	-0.173	-2.191**	-0.229	-1.809*	-0.102	-1.575	-0.157	-1.962**	-0.088	-1.631
International Financial Reporting Standards	0.033	0.504	0.014	0.201	0.021	0.294	0.048	0.688	0.018	0.247	0.113	1.915*
Rank of Attractiveness of Returns to Sustainable Investment									0.121	2.344**	0.027	0.648
Chief Investment Officer Responsibility	0.406	2.327**	0.476	3.219***	0.459	2.957***	0.400	2.252**	0.441	2.415**	0.047	0.233
Log (Assets)	0.071	1.740*	0.066	1.531	0.038	0.776	0.073	1.793*	0.077	1.707*	0.048	1.409
Pension Fund	0.227	1.481	0.269	1.631	0.210	1.195	0.233	1.516	0.203	1.143	0.189	1.313
Insurance Company	0.219	1.341	0.286	1.726*	0.257	1.555	0.220	1.353	0.262	1.480	0.275	1.566
Model Diagnostics												
Number of Observations	100		100		100		100		100		100	
Number of Observations where Dependent Variable = 1	43		43		43		43		43		29	
Adjusted R ² (pseudo R ² for Model 1)	0.072		0.124		0.143		0.076		0.167		0.120	
Loglikelihood Function	-63.440		-59.866		-58.559		-63.120		-56.929		-52.994	
Chi Square Statistic	9.783		16.930**		19.545***		10.424***		22.805***		14.442***	